

REMARKS

The Office Action mailed December 28, 2005 has been carefully reviewed and, in view of the above amendments and following remarks, reconsideration and allowance of the application are respectfully requested.

I. Claims Summary

Claims 10-12, 14-17, and 34-38 are currently pending in the application, with claims 10 and 34 being independent claims. Claims 1-9, 13, and 18-25 are cancelled, and claim 10 is amended, in accordance with the above amendments.

II. Entry of Amendment for Purposes of Appeal

Claim 10 is amended to recite a rounded leading edge and a tapered trailing edge. These recitations were previously incorporated into independent claim 34. Accordingly, this amendment does not raise new issues that would require further consideration and search. The Applicants respectfully request, therefore, that the amendment be entered for purposes of appeal and considered by the Examiner.

III. Office Action Summary

The following claim rejections for claims 10-12, 14-17, and 34-38 were submitted by the Examiner in the outstanding Office Action:

- Claims 10-12, 14, 16, and 17 are rejected under 35 U.S.C. §103(a) as being unpatentable over a combination of U.S. Patent Number 6,571,618 to Demay, et al., U.S. Patent Number 3,306,101 to Holderer, and a publication entitled *The Aerodynamics of a Tennis Ball* by Mehta, et al.;
- Claim 15 is rejected under 35 U.S.C. §103(a) as being unpatentable over a combination of Demay, Holderer, and a publication entitled *Golf Ball Aerodynamics* by Bearman, et al.;
- Claims 34 and 35 are rejected under 35 U.S.C. §103(a) as being unpatentable over a combination of Demay, Holderer, and U.S. Patent Number 4,501,214 to Meyer;
- Claim 36 is rejected under 35 U.S.C. §103(a) as being unpatentable over a combination of Demay, Holderer, Meyer, and Bearman; and

- Claims 37 and 38 are rejected under 35 U.S.C. §103(a) as being unpatentable over a combination of Demay, Holderer, Meyer, and Mehta.

IV. Discussion of Rejections

Discussion of Claims 10-12 and 14-17

Independent claim 10 recites a testing apparatus for a game ball. The testing apparatus includes a rotating element, a mount, an airfoil, and a sensor. The rotating element has a first end, a second end, and a longitudinal axis that extends through the first end and the second end. In addition, the rotating element is rotatable about the longitudinal axis. The mount is located proximal the first end of the rotating element and configured to secure to the game ball. The mount is rotatable with the rotating element about the longitudinal axis. The airfoil extends around the rotating element, and the airfoil has a rounded leading edge and a tapered trailing edge. The sensor detects forces upon the game ball in a first direction and a second direction. The first direction corresponds with a direction between the leading edge and the trailing edge, and the second direction is orthogonal to both the first direction and the longitudinal axis.

The Office Action rejects independent claim 10 as being unpatentable over Demay, Holderer, and Mehta. To establish obviousness, the burden is upon the Examiner to demonstrate that the prior art references teach or suggest all claim limitations. That is, all of the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981 (C.C.P.A. 1974). None of the prior art references cited by the Examiner, however, disclose (a) an airfoil or (b) a rounded leading edge and a tapered trailing edge.

According to the rejection, Demay discloses an airfoil extending around the rotating element, and the airfoil has a leading edge and a trailing edge (i.e., the streamlined casing 44 in Figure 3). The mere fact that the casing is streamlined, does not indicate that the casing is an airfoil. Every round object does not qualify as a sphere. Similarly, every streamlined object does not qualify as an airfoil. An airfoil is a term of art that denotes a particular shape with the ability to control stability, direction, lift, thrust, or propulsion, for example. Whereas independent claim 10 recites the presence of an airfoil, Demay merely discloses a streamlined casing without the qualities of an airfoil. Furthermore, the casing does not have a rounded leading edge and a tapered trailing edge.

Based upon the above discussion, the Applicants respectfully submit that independent claim 10 is allowable over Demay, Holderer, and Mehta. In addition, claims 11, 12, 14, 16, and 17 should be allowable for at least the same reasons. Claim 15 should also be allowable as Bearman does not remedy the deficiencies discussed above.

Discussion of Claims 34-36

Independent claim 34 recites a testing apparatus for a game ball. The testing apparatus includes a rotating element, a mount, a support, and a sensor. The rotating element has a first end, a second end, and a longitudinal axis that extends through the first end and the second end. In addition, the rotating element is rotatable about the longitudinal axis. The mount is located proximal the first end of the rotating element and configured to secure to the game ball. The mount is rotatable with the rotating element about the longitudinal axis. The support extends around the rotating element, and the support has a rounded leading edge and a tapered trailing edge that define a teardrop shape in the support. The sensor detects forces upon the game ball in a first direction and a second direction. The first direction corresponds with a direction between the leading edge and the trailing edge, and the second direction is orthogonal to both the first direction and the longitudinal axis.

i. No Prima Facie Case

The Office Action rejects independent claim 10 as being unpatentable over Demay, Holderer, and Meyer. To establish a *prima facie* case of obviousness, the burden is upon the Examiner to demonstrate reasons why a skilled artisan, confronted with the same problem as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed. *In re Rouffet*, 149 F.3d 1350, 1357, 47 U.S.P.Q.2d 1453, 1458 (Fed. Cir. 1998). Accordingly, obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. *In re Geiger*, 815 F.2d 686, 688, 2 U.S.P.Q.2d 1276, 1278 (Fed. Cir. 1987). With regard to the present issue, the rejection does not establish a *prima facie* case of obviousness because no proper motivation exists to combine Demay, Holderer, and Meyer.

As a motivation for making the combination of Demay, Holderer, and Meyer, the rejection states that it would have been obvious to "modify the streamlined casing of Demay et al. by making it tear-drop shape as taught by Meyer in order to make the support strong and light" (Office Action, page 9, final 3 lines). As a first matter, there is no showing or even an attempt to demonstrate that a combination of Demay, Holderer, and Meyer would actually provide a stronger or lighter support. That is, the rejection merely asserts that the combination would increase strength and decrease weight without any attempt to actually demonstrate that strength would be increased or weight would be decreased. Furthermore, the rejection fails to demonstrate that a teaching, suggestion, or incentive supporting the combination exists. Neither Demay, Holderer, nor Meyer discuss a need for increasing strength and decreasing weight of a support, and the Appellant is aware of no recognized understanding in the art that the devices of Demay and Holderer are in need of changes in strength and weight. Accordingly, the rejection of independent claim 34 is improper for failing to establish a *prima facie* case of obviousness.

ii. Unsatisfactory For Intended Purpose

If a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon* 733 F.2d 900, 902, 221 U.S.P.Q. 1125, 1127 (Fed. Cir. 1984). As noted above, the rejection states that it would have been obvious to "modify the streamlined casing of Demay et al. by making it tear-drop shape as taught by Meyer in order to make the support strong and light" (Office Action, page 9, final 3 lines). Decreasing the weight of a support for a testing apparatus may actually be detrimental to the performance of the testing apparatus. As air flows around the testing apparatus, the air may tend to move, vibrate, or otherwise affect the testing apparatus, particularly if the testing apparatus is light. Accordingly, decreasing the weight may make the testing apparatuses in Demay and Holderer unsatisfactory for its intended purpose.

iii. Hindsight: Picking and Choosing

Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. *In re Geiger*, 815 F.2d 686, 688, 2 U.S.P.Q.2d 1276, 1278 (Fed. Cir. 1987).

Furthermore, selective hindsight is no more applicable to the design of experiments than it is to the combination of prior art teachings. There must be a reason or suggestion in the art for selecting the procedure used, other than the knowledge learned from the Applicants' disclosure. *In re Dow Chemical Co.*, 837 F.2d 469, 5 U.S.P.Q.2d 1529 (Fed. Cir. 1988). Moreover, hindsight analysis is clearly improper since the statutory test is whether the subject matter as a whole would have been obvious at the time the invention was made. *In Re Deminski*, 796 F.2d 436, 230 U.S.P.Q. 313 (Fed. Cir. 1986).

Demay and Holderer disclose wind tunnel testing apparatuses, and Meyer discloses a mast for a sail. In rejecting independent claim 34, the Office Action merely presents elements from each reference and combines the elements to purportedly arrive at the claimed invention.

The rejection of independent claim 34 does not present a line of reasoning as to why an artisan reviewing only the collective teachings of the references would have found it obvious to selectively pick and choose concepts from Meyer to incorporate into Demay and Holderer. As discussed above, the rationale presented in the Office Action could actually have a detrimental effect upon the performance of the testing apparatuses in Demay and Holderer. In this circumstance, the rejection does little more than cite references to show that various concepts, when each is viewed in a vacuum, are known. The claimed invention, however, is clearly directed to a combination of concepts (e.g., testing apparatus having rotating element, a mount, a support with a teardrop shape, and a sensor). That is to say, the Applicant does not claim the invention of a teardrop-shaped element, for example, but has presented claims to an invention that is a new combination of concepts. To support the conclusion that the claimed combination is directed to obvious subject matter, the references must expressly or impliedly suggest the claimed combination, or the rejection must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references. A review of Demay, Holderer, Meyer, and the Office Action does not provide a sufficient basis that would expressly or impliedly teach or suggest the combinations suggested by the Examiner. More particularly, the rejection of independent claim 34 does not set forth a reasonable motivation for combining Demay, Holderer, and Meyer in a manner that forms a testing apparatus having the features of independent claim 34.

Based upon the above discussion, the Applicants respectfully submit that independent claim 34 is allowable over Demay, Holderer, and Meyer. In addition, claims 35-38 should be allowable for at least the same reasons and because Bearman and Mehta do not remedy the deficiencies discussed above.

V. Conclusion

In view of the foregoing, the Applicants respectfully submit that all claims are in a condition for allowance. The Applicants respectfully request, therefore, that the rejections be withdrawn and that this application now be allowed.

This Amendment is being timely filed by facsimile transmission on March 10, 2006. Should fees be deemed necessary for consideration of this Amendment, such fees are hereby requested and the Commissioner is authorized to charge deposit account number 19-0733 for payment. If anything further is desirable to place the application in even better form for allowance, the Examiner is respectfully requested to telephone the undersigned representative at (503) 425-6800.

Respectfully submitted,

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